



APPENDIX A

DESCRIPTION OF AREA AFFECTED BY WASHINGTON’S FOREST PRACTICES RULES AND SAMPLING

Introduction

The Forest Practices Rules are enforced on most nonfederal forest lands within Washington State. In some cases, specific Forest Practices Rules can be replaced by other rules governing the lands. This can be the case for riparian and other rules on lands within the boundary of some federally recognized habitat conservation plans (HCP) that address fish and, in certain urban growth areas.

Because of the large amount of land addressed by this EIS, it was necessary to select a sample area for the purpose of quantitatively comparing the water typing, riparian habitat, and other rules among the alternatives. This appendix describes a set of lands assumed to be subject to the Forest Practices Rules for this EIS, and the sample selected to represent them.

In order to improve the ability to discuss and analyze how the alternatives affect the state, it was stratified into 10 regions, 5 in western Washington and 5 in eastern Washington. The 10 regions were identified on the basis of major river basin boundaries; major river basins were grouped together to form the regions primarily on the basis of the distribution of threatened or endangered fish and broad physiographic zones. The 10 regions are shown in Figure 1 and the forested lands assumed in this EIS to be subject to Forest Practices Rules are shown with the regions in Figure 2.

Washington Lands Assumed to be Subject to Forest Practices Rules

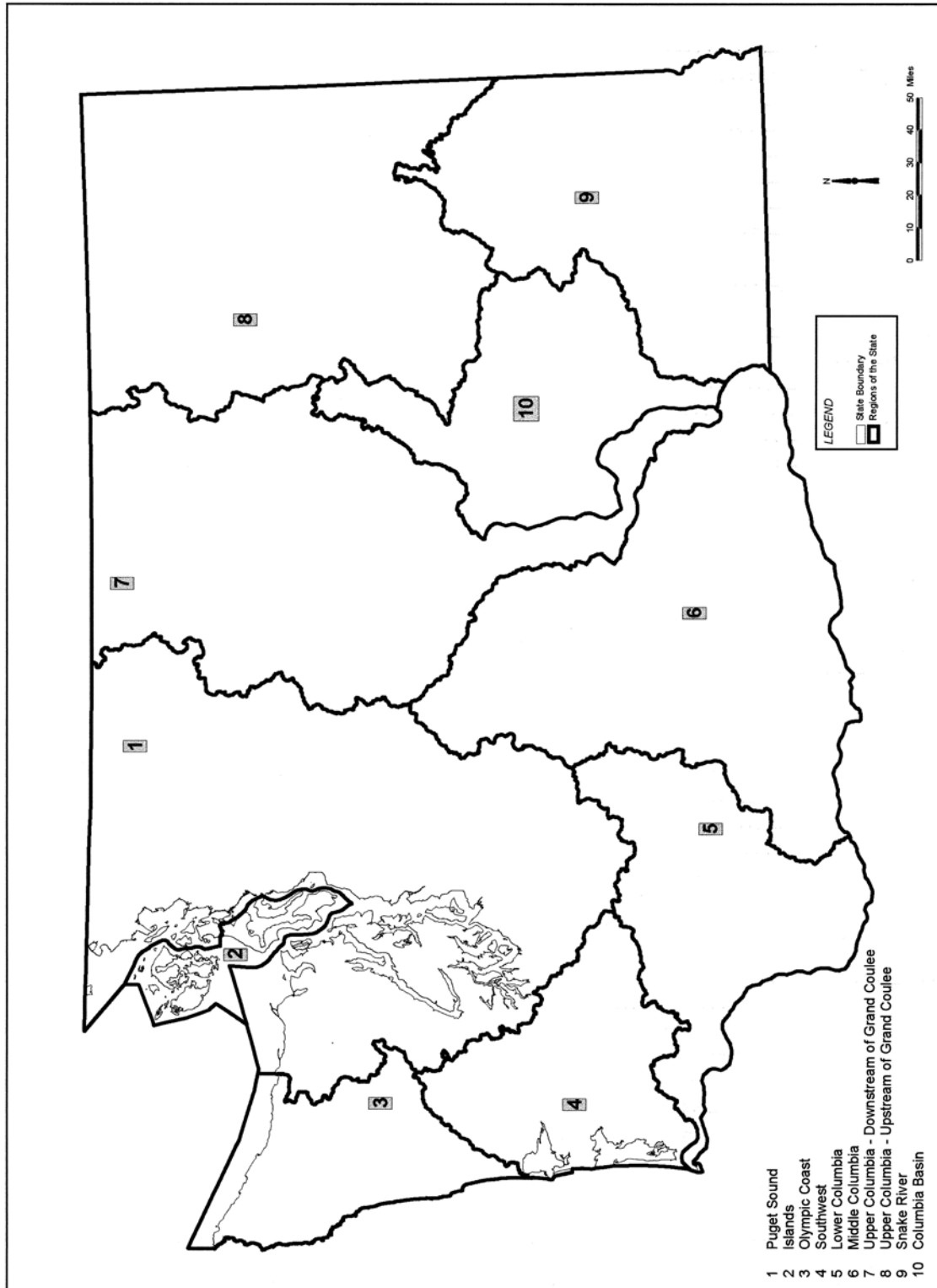
The state of Washington includes approximately 67,608 square miles of land, including 24,534 square miles in western Washington and 43,074 square miles in eastern Washington (Table 1). The majority of these lands are in private ownership and federal ownership makes up the second largest area. State and other ownerships make up the remainder. Approximately 83 percent of western Washington and approximately 41 percent of eastern Washington are forested (Table 2).

As noted above, the lands in Washington state assumed to be subject to all Forest Practices Rules for this EIS include all private and state-owned forest lands with the exception of those lands within the boundaries of certain large HCPs, primarily in western Washington, and certain urban growth areas. State-managed forest lands in western Washington were not included in the analysis because of the DNR HCP which applies to anadromous fish and wildlife on the west side. Table 3 identifies the acreage of lands subject to all Forest Practices Rules. The table stratifies these lands by ownership and by region of the state, including west side versus east side. This table indicates that there are approximately 9,483 square miles of forest lands subject to Forest Practices Rules on the west side, all



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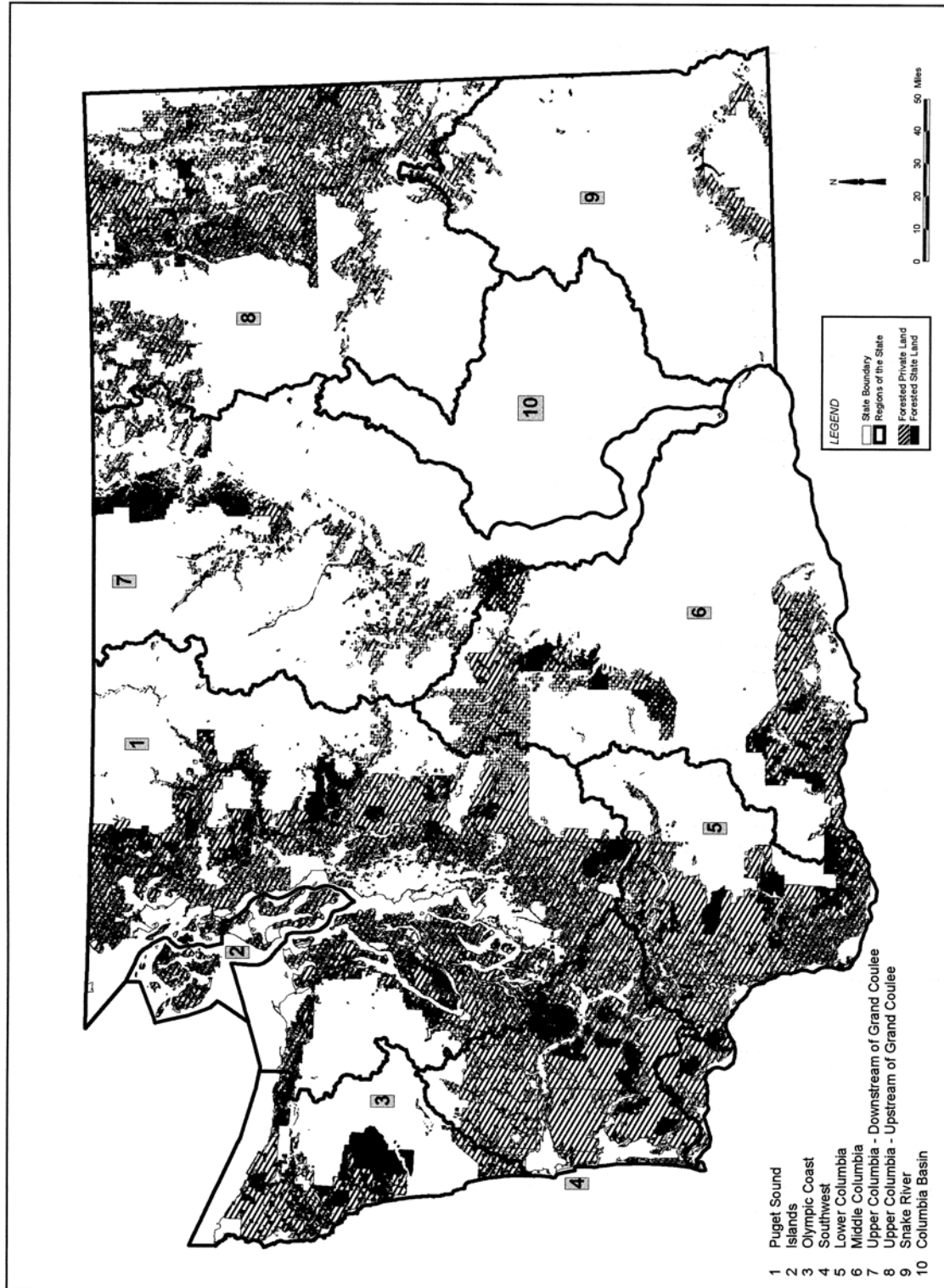
Figure 1. Ten Regions of Washington Used for Analysis in this EIS



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Figure 2. Forested Lands Assumed to be Subject to Washington Forest Practices Rules (shown as cross-hatched or solid) in this EIS and the Ten Regions





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Table 1. Washington State Land Areas by Ownership and Region (in square miles)

Region	Total Land Areas				Total (sq. mi.)
	Private (sq. mi.)	State (sq. mi.)	Federal (sq. mi.)	Other (sq. mi.)	
West Side					
Puget Sound	6,391	1,092	5,407	307	13,196
Islands	157	14	3	2	176
Olympic Coast	778	471	1,134	365	2,748
Southwest	2,938	392	208	25	3,563
Lower Columbia	2,733	443	1,668	7	4,852
TOTAL	12,997	2,412	8,420	706	24,535
East Side					
Middle Columbia	4,795	886	2,478	1,962	10,121
Snake	6,287	273	582	7	7,150
Upper Columbia - Below G.C. Dam	3,508	1,035	5,112	675	10,330
Upper Columbia - Above G.C. Dam	6,203	539	2,329	1,757	10,828
Columbia Basin	3,518	240	861	26	4,645
TOTAL	24,311	2,974	11,363	4,426	43,074
GRAND TOTAL	37,309	5,385	19,783	5,131	67,608

Table 2. Washington State Forest Land Areas by Ownership and Region (in square miles)

Region	Total Forest Land Areas				Total (sq. mi.)	Percent of Region Forested
	Private (sq. mi.)	State (sq. mi.)	Federal (sq. mi.)	Other (sq. mi.)		
West Side						
Puget Sound	4,464	1,004	4,418	248	10,135	77%
Islands	128	11	2	1	143	81%
Olympic Coast	705	464	1,032	334	2,535	92%
Southwest	2,532	375	203	22	3,132	88%
Lower Columbia	2,309	434	1,562	6	4,311	89%
TOTAL	10,138	2,289	7,217	611	20,255	83%
East Side						
Middle Columbia	1,360	488	1,810	914	4,572	45%
Snake	346	33	491	1	871	12%
Upper Columbia - Below G.C. Dam	655	469	4,073	268	5,465	53%
Upper Columbia - Above G.C. Dam	2,685	440	2,241	1,442	6,808	63%
Columbia Basin	0	0	0	0	0	0%
TOTAL	5,046	1,430	8,616	2,625	17,717	41%
GRAND TOTAL	15,184	3,719	15,833	3,236	37,972	56%



Table 3. Acreage of Washington State Forest Lands Subject to Forest Practices Rules

	Total Forest Lands (sq. mi.)	Total State & Private Forest Lands (sq. mi.)	Forest Lands Chosen for Sampling		
			Private (sq. mi.)	State (sq. mi.)	Total (sq. mi.)
West Side					
Puget Sound	10,135	5,468	3,983	-	3,983
Islands	143	202	127	-	127
Olympic Coast	2,535	1,169	700	-	700
Southwest	3,132	2,879	2,493	-	2,493
Lower Columbia	4,311	2,863	2,179	-	2,179
TOTAL	20,255	12,582	9,483	-	9,483
East Side					
Middle Columbia	4,572	1,665	1,171	488	1,659
Upper Columbia - Downstream of Grand Coulee	871	1,124	655	469	1,124
Upper Columbia - Upstream of Grand Coulee	5,465	3,125	2,685	440	3,125
Columbia Basin	6,808	0	0	0	0
Snake	0	407	346	33	379
TOTAL	17,717	6,321	4,857	1,430	6,287
GRAND TOTAL	37,972	18,903	14,340	1,430	15,770

on private lands, and 6,287 square miles on the east side, 77 percent of which are private lands and 23 percent are state.

Random Sample

In order to represent the lands shown in Figure 1 and tabulated in Table 3, a sample was selected using a GIS random sampling method applied to one-mile square sections of the state. The sample was stratified by ownership (private vs. state) and the side of the state (west side vs. east side). The requirements were that the sections had to contain some forested lands and private or state ownership. As a result, three categories of land within Washington state were randomly sampled. The categories were (1) Eastside State, (2) Eastside Private, and (3) Westside Private. The categories sampled were limited to these three because they represent the vast majority of lands in Washington state subject to Forest Practices Rules. As noted above, no westside state trust lands were sampled because these lands are under an HCP which determines the natural resource protection level for these lands.

A total of 182 sections was selected, including 93 sections containing private forest land on the west side, 65 sections containing private forest land on the east side, and 24 sections containing state forest land on the east side. Table 4 itemizes the number of sections sampled and the acres selected in each region of the state.

The analyses we conducted that required spatial measurements were evaluated on these sample sections. Geographic information system (GIS) coverages used in the analyses included hydrography (streams by type), soils (including site class), vegetation (including seral stage), topography (from digital elevation models), and others. The analyses conducted using these sample



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sections are described in Appendix C (Water Type Modeling), Appendix D (Riparian Habitat Modeling), and Appendix E (Unstable Slope Modeling).

Table 4. Acreage and Number of Sample Sections Selected to Represent Washington State Forest Lands Subject to Forest Practices Rules

Region	Private Lands		State Lands	
	# of Sections	Total Acres	# of Sections	Total Acres
West Side				
Lower Columbia	21	10,510	-	-
Olympic Coast	8	4,615	-	-
Puget Sound	38	17,883	-	-
Southwest	26	14,499	-	-
TOTAL	93	47,507	-	-
East Side				
Middle Columbia	12	5,491	8	3,560
Snake	4	867	-	-
Upper Columbia – Below Grand Coulee	17	5,913	13	9,590
Upper Columbia – Above Grand Coulee	32	13,611	3	1,434
TOTAL	65	25,882	24	14,584
GRAND TOTAL	158	73,388	24	14,584

Table 5 lists the three categories and reports the forested area sampled within each category, as well as the distribution of these categories throughout Washington state. A total of about 16,614 square miles (10,642,960 acres) of forested lands were sampled. Because the proportion of eastside state lands sampled (1.2%) was higher than the proportion of eastside private land area sampled (0.7%), it was necessary to weight the eastside data before combining the two.

Table 5. Forested Area of Washington State and Sample Sections for each of the Three Categories Randomly Sampled (the percent of area represented in the sample sections is also given)

Categories Sampled	Total WA State	Forested Portion of	
	Forested Area (ac)	Sampled Area (ac)	Percent Sampled (%)
Eastside State	915,200	11,212	1.2
Eastside Private	3,229,440	21,514	0.7
Westside Private	6,488,320	41,749	0.6
Total	10,632,960	74,475	0.7

On the east side, 1.2 percent of the total area of forested state lands were sampled and 0.7 percent of the private forested lands were sampled. Of the total forested state and private lands on the east side, 22 percent are state lands and 78 percent are private. To properly account for the unequal sampling proportions on the east side, we weighted all eastside state data. The weighting factor used was $0.6662/1.2251 = 0.544$ (i.e., all eastside state totals were multiplied by this factor before combining the data with eastside private data for the purpose of estimating an eastside total).